Amendments to the Claims

1. (Original) A carbapenem compound represented by the following formula [1],

$$R^1$$
 O
 RO_2C
 G
 G

wherein R^1 is C_1 - C_3 alkyl group or C_1 - C_3 alkyl group substituted by hydroxy group,

R is hydrogen atom or a group which reproduces carboxyl group by hydrolysis in vivo, and

G is a group represented by

the formula G1:

the formula G2:

wherein Y^1 is C_1 - C_4 alkyl, C_2 - C_4 alkoxy, - $(CH_2)_{ma}$ -O- CH_3 (in which ma is an integer of 1~3), -O- $(CH_2)_{ma}$ -O- $(CH_2)_{mb}$ -CH₃ (in which ma is the same as defined above, mb is an integer of 0~3), trifluoromethoxy, halogen atom, cyano or - $SO_2NR^2R^3$ (in which R^2 and R^3 are independently hydrogen atom, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted aralkyl, or optionally substituted heteroarylalkyl, or R^2 and R^3 may be taken together with the nitrogen atom to form a 3 to 7 membered hetero ring which may be substituted.), or the formula G3:

$$\begin{array}{c|c}
H & H \\
\hline
A & R^0 \\
\hline
Y^2
\end{array}$$
[G3]

wherein A is $-(CH_2)_r$ -(in which r is an integer of $1\sim3$), $-(CH_2)_s$ -O- $(CH_2)_t$ -(in which s and t are independently is an integer of $0\sim3$), $-O-(CH_2)_r$ -O- $(CH_2)_s$ -(in which r and s are the same as defined above), $-(CH_2)_s$ -NR^a- $(CH_2)_t$ -(in which, s and t are the same as defined above, R^a is hydrogen atom, protective group of amino group or optionally substituted C₁-C₆ alkyl), R⁰ is hydrogen atom, the formula [2]:

$$\begin{array}{c|c}
O & R^{2a} \\
CN & R^{3a}
\end{array}$$
[2]

wherein R^{2a} and R^{3a} are independently (i) hydrogen atom, (ii) optionally substituted C_1 - C_6 alkyl, (iii) optionally substituted C_3 - C_7 cycloalkyl, (iv) optionally substituted aryl, (v) optionally substituted heteroaryl, (vi) optionally substituted aralkyl, (vii) optionally substituted heteroarylalkyl, or (viii) an optionally substituted 3 to 7 membered hetero ring, or R^{2a} and R^{3a} are taken together with the nitrogen atom to form a 3 to 7 membered hetero ring which may be substituted or the formula [3]:

wherein m is an integer of 0 or 1, R^{3b} is hydrogen atom, optionally substituted C_1 - C_6 alkyl, optionally substituted C_3 - C_7 cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted aralkyl, optionally substituted heteroarylalkyl, or an optionally substituted 3 to 7 membered hetero ring, and when m is 1, R^{3b} may further mean a group which reproduces carbonyl group by hydrolysis in vivo, provided that when t is 0 and m is 1, R^{3b} is other group than hydrogen atom, and Y^2 is C_1 - C_4 alkoxy, halogen atom, cyano or -NR 4 R 5 (in which R 4 and R 5 are independently

(i) hydrogen atom, (ii) a protective group of amino group, (iii) optionally substituted C₁-C₆ alkyl, (iv) optionally substituted C₃-C₇ cycloalkyl, (v) formyl, (vi) C₂-C₇

alkylcarbonyl, (vii) optionally substituted aryl, (viii) optionally substituted heteroaryl, (ix) optionally substituted aralkyl, (x) optionally substituted heteroarylalkyl, or (xi) an optionally substituted 3 to 7 membered hetero ring, or R⁴ and R⁵ are taken together with the nitrogen atom to form pyrrolidine, piperidine or azepam), or a pharmaceutically acceptable salt thereof.

2. (Currently amended) A carbapenem compound or a pharmaceutically acceptable salt thereof represented by the following formula [1-a] wherein G is G1 in the above formula [1]:

wherein R¹ and R are the same as <u>defined in claim 1</u>, or a pharmaceutically acceptable salt thereof.

3. (Original) A carbapenem compound represented by the following formula [1-b]:

$$\begin{array}{c|c} R^1 & H & H \\ \hline \\ O & N \\ \hline \\ RO_2C & H & H \end{array}$$

wherein R¹ and R are the same as defined in claim 1, or a pharmaceutically acceptable salt thereof.

4. (Original) A carbapenem compound represented by the following formula [1-c]:

$$R^1$$
 CO_2R
 $[1-c]$

wherein R^1 , R and Y^1 are the same as defined in claim 1, or a pharmaceutically acceptable salt thereof.

5. (Original) A carbapenem compound or a pharmaceutically acceptable salt thereof represented by the following formula [1-d]:

$$R^1$$
 CO_2R
 Y^2
 A
 R^0
[1-d]

wherein R^1 , R, A, R^0 and Y^2 are the same as defined in claim 1, or a pharmaceutically acceptable salt thereof.

6. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5 claim 1 or a pharmaceutically acceptable salt thereof wherein a group which reproduces carboxyl group by hydrolysis in vivo is a group of the formula [4]:

$$\begin{array}{cccc} & \leftarrow & \text{CH}_2\text{OC} & \leftarrow & \text{(O)}_n & \leftarrow & \text{R}^7 \\ & & & & \text{II} \\ & & & & \text{R}^6 & \text{O} \end{array}$$

wherein R^6 is hydrogen atom or C_1 - C_6 alkyl, R^7 is optionally substituted C_1 - C_{10} alkyl, or optionally substituted C_3 - C_{10} eyeloalky, and nis_cycloalkyl, and n is an integer of 0 or 1.

7. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5 claim 1 or a pharmaceutically acceptable salt thereof wherein R is a group of the formula [4] claimed in claim 4 [4]:

$$\begin{array}{ccc} \leftarrow \text{CH}_2\text{OC} & \leftarrow \text{(O)}_n & \leftarrow \text{R}^7 \\ & \text{II} & & \text{R}^6 & \text{O} \end{array}$$
 [4]

wherein R^6 is hydrogen atom or C_1 - C_6 alkyl, R^7 is optionally substituted C_1 - C_{10} alkyl, or optionally substituted C_3 - C_{10} cycloalkyl, and n is an integer of 0 or 1.

- 8. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 7 claim 1 or a pharmaceutically acceptable salt thereof wherein R¹ is 1-hydroxyethyl.
- 9. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5 claim 1 or a pharmaceutically acceptable salt thereof wherein R is pivaloyloxymethyl, acetyloxymethyl, acetyloxy-1-ethyl, isopropyloxycarbonyloxy-1-ethyl or cyclohexyloxycarbonyloxy-1-ethyl.
- 10. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5 claim 1 or a pharmaceutically acceptable salt thereof wherein Ris R is pivaloyloxymethyl.
- 11. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5-claim 1 or a pharmaceutically acceptable salt thereof wherein R is phthalidyl or (5-methyl-2-oxo-1,3-dioxol-4-yl)methyl.
- 12. (Currently amended) The carbapenem compound claimed in any one of claims 1 to 5 claim 1 or a pharmaceutically acceptable salt thereof wherein R is hydrogen atom.
- 13. (Currently amended) The carbapenem compound claimed in claim 4 or a pharmaceutically acceptable salt thereof wherein Y^1 is C_2 - C_4 alkoxy, $-(CH_2)_{ma}$ -O- $-(CH_3)_{ma}$ which ma is the same as defined in claim 1 an integer of 1-3) or -O- $-(CH_2)_{ma}$ -O- $-(CH_2)_{mb}$ - $-(CH_3)_{ma}$ (in which ma is as defined above and mb are the same as defined in claim 1 is an integer of 0-3).

- 14. (Original) The carbapenem compound claimed in claim 4 or a pharmaceutically acceptable salt thereof wherein Y^1 is C_1 - C_4 alkyl, trifluoromethoxy, halogen atom or cyano.
- 15. (Currently amended) The carbapenem compound claimed in claim 4 or a pharmaceutically acceptable salt thereof wherein Y¹ is -SO₂NR²R³ (in which R² and R³ are the same as defined in claim 1 independently hydrogen atom, optionally substituted lower alkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted aralkyl, or optionally substituted heteroarylalkyl, or R² and R³ may be taken together with the nitrogen atom to form a 3 to 7 membered hetero ring which may be substituted).
- 16. (Original) The carbapenem compound claimed in claim 4 or a pharmaceutically acceptable salt thereof wherein Y¹ is ethoxy, -CH₂-O-CH₃, -(CH₂)₂-O-CH₃ or -O-(CH₂)₂-O-CH₃.
- 17. (Currently amended) The carbapenem compound claimed in any one of claims 4, 13 to 16 claim 4 or a pharmaceutically acceptable salt thereof wherein Y¹ on benzene ring is metha or para to the binding position of 7-oxo-1-azabicyclo[3.2.0]hept-2-ene.
- 18. (Currently amended) The carbapenem compound claimed in any one of claims 4, 13 to 16 claim 4 or a pharmaceutically acceptable salt thereof wherein Y¹ on benzene ring is para to the binding position of 7-oxo-1-azabicyclo[3.2.0]hept-2-ene.
- 19. (Currently amended) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof wherein R⁰ is a formula [2]:

wherein R^{2a} and R^{3a} are the same as defined in claim 1 independently (i) hydrogen atom, (ii) optionally substituted C_1 - C_6 alkyl, (iii) optionally substituted C_3 - C_7 cycloalkyl, (iv) optionally substituted aryl, (v) optionally substituted heteroaryl, (vi) optionally

substituted aralkyl, (vii) optionally substituted heteroarylalkyl, or (viii) an optionally substituted 3 to 7 membered hetero ring, or R^{2a} and R^{3a} are taken together with the nitrogen atom to form a 3 to 7 membered hetero ring which may be substituted.

20. (Currently amended) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof, wherein R⁰ is a formula [3]:

$$\begin{array}{c}
O \\
II \\
C - (O)_m R^{3b}
\end{array} [3]$$

wherein m-and R^{3b} are the same as defined in claim 1 is an integer of 0 or 1, and R^{3b} is hydrogen atom, optionally substituted C_1 - C_6 alkyl, optionally substituted C_3 - C_7 cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, optionally substituted aralkyl, or an optionally substituted 3 to 7 membered hetero ring, and when m is 1, R^{3b} may further mean a group which reproduces carbonyl group by hydrolysis in vivo, provided that when t is 0 and m is 1, R^{3b} is other group than hydrogen atom.

- 21. (Original) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof wherein Y^2 is C_1 - C_4 alkyl.
- 22. (Original) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof wherein Y^2 is C_1 - C_4 alkoxy.
- 23. (Original) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof wherein Y^2 is halogen atom or cyano.
- 24. (Currently amended) The carbapenem compound claimed in claim 5 or a pharmaceutically acceptable salt thereof wherein Y² is -NR⁴R⁵ (in which R⁴ and R⁵ are the same as defined in claim 1 independently

 (i) hydrogen atom, (ii) a protective group of amino group, (iii) optionally substituted C₁-C₆ alkyl, (iv) optionally substituted C₃-C₇ cycloalkyl, (v) formyl, (vi) C₂-C₇ alkylcarbonyl, (vii) optionally substituted aryl, (viii) optionally substituted heteroaryl,

- (ix) optionally substituted aralkyl, (x) optionally substituted heteroarylalkyl, or (xi) an optionally substituted 3 to 7 membered hetero ring, or R⁴ and R⁵ are taken together with the nitrogen atom to form pyrrolidine, piperidine or azepam).
- 25. (Currently amended) A medicament containing a carbapenem compound claimed in any one of claims 1 to 24 claim 1 or a pharmaceutically acceptable salt thereof as an active ingredient.
- 26. (Currently amended) An antibacterial agent containing a carbapenem compound claimed in any one of claims 1 to 24 claim 1 or a pharmaceutically acceptable salt thereof as an active ingredient.
- 27. (Currently amended) An oral medicament containing a carbapenem compound claimed in any one of claims 1 to 24 claim 1 or a pharmaceutically acceptable salt thereof as an active ingredient.
- 28. (Currently amended) An oral antibacterial agent containing a carbapenem compound claimed in any one of claims 1 to 24 claim 1 or a pharmaceutically acceptable salt thereof as an active ingredient.